REMARKS

Claims 1-7, 10-20, and 27-44 are pending. Reconsideration and allowance are respectfully requested in light of the above amendments and following remarks.

New Matter Objection and Rejections under 35 U.S.C. §112

The Examiner objected to the amendment filed on May 22, 2006 because the specification and claims assertedly contained new matter. Additionally, Claims 29, 31-34, and 36-40 stand rejected under 35 U.S.C. §112, first paragraph, as assertedly failing to comply with the written description requirement. Insofar as these objections and rejections may be applied to the specification and claims, Applicants respectfully traverse these objections and rejections.

Again, all of the amendments are supported by FIGURES 1 and 2 of the specification, as originally filed. According to MPEP 2163(II)(A)(3), "[a]n applicant may show possession of an invention by disclosure of drawings or structural chemical formulas that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole." *See*, e.g., *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1565 ("drawings alone may provide a 'written description' of an invention as required by Sec. 112"); *see* also *In re Wolfensperger*, 302 F.2d 950, 133 USPQ 537 (CCPA 1962) (the drawings of applicant's specification provided sufficient written descriptive support for the claim limitation at issue). Therefore, Applicant is entitled to have the above-referenced amendments to the specification entered. These assertions, however, may not be entirely clear, so Applicants have provided a detailed explanation, which is as follows:

Isocline fold

The Specification was objected to and Claim 29 was rejected under 35 U.S.C. §112, first paragraph, because Applicant amended the Specification and Claim 29 to include the term "isocline fold." As stated above, Applicant respectfully traverses this objection and rejection. In FIGURE 1 below (as an example), the annular countersink or reinforcing bead can be seen. Applicant respectfully asserts that the annular countersink or reinforcing bead, as shown, forms an isocline fold. According to the American Heritage Dictionary® of the English Language (Fourth Edition. 2000), there are several types of folds: isocline fold (top), overfold (middle), and recumbent fold (bottom).

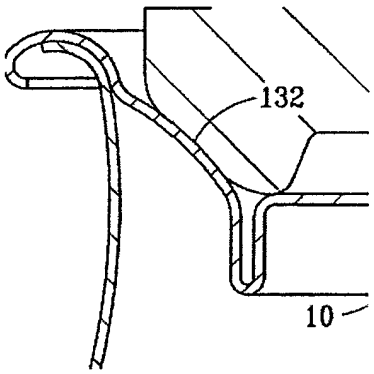
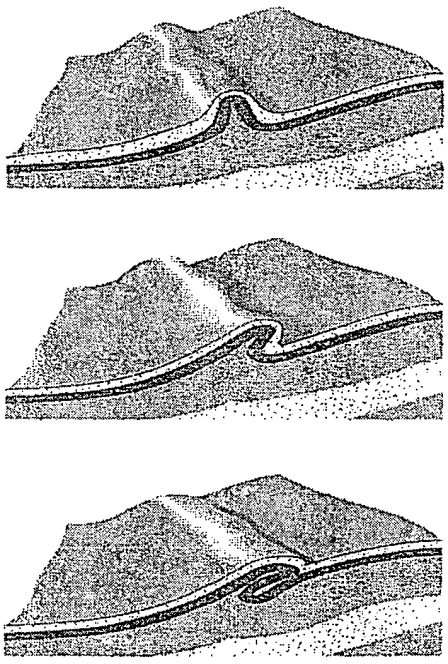


Figure 1 (as originally filed)



Illustrations of folds

When a comparison is made between the illustrations available in the American Heritage Dictionary® and the countersink or reinforcing bead, it is clear that the reinforcing bead closely

resembles an isocline fold. Therefore, "isocline fold" does not constitute new matter, and Applicants clearly complied with the written description requirement of §112. Accordingly, Applicants respectfully request that the rejections of Claim 29 under 35 U.S.C. §112, first paragraph, and that the objection to the Specification be withdrawn.

Representation by Taylor Series and Polynomials

The Specification was objected to and Claims 34 and 40 were rejected under 35 U.S.C. §112, first paragraph, because Applicant amended the Specification and Claim 34 and 40 to include representations by Taylor Series. As stated above, Applicant respectfully traverses this objection and rejection. In FIGURE 1 below (as an example), the cross section of the chuckwall is arcuate. Applicant respectfully asserts that the mathematical representation of the arcuate chuckwall can take a variety of forms, namely Taylor Series.

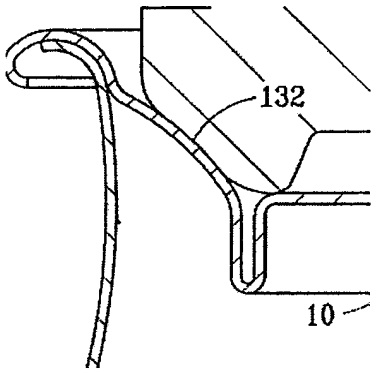


Figure 1 (as originally filed)

Taylor's Theorem states that for a function (f) that is n times differentiable on the interval [a,x] and n+1 differentiable on the interval (a,x) that there exists a Taylor Series representation of function (f). The Taylor Series about value, a, is then defined as follows:

$$f(x)=\sum_{i=0}^{n}\frac{f^{(i)}(a)}{i!}(x-a)^{i}+\frac{f^{(n+1)}(b)}{(n+1)!}(x-b)^{(n+1)}$$

where the last term represents the Lagrange from of the remainder of the Taylor series. As an example, if the chuckwall were assumed to semicircular of a radius equal to 1, the function that would represent the cross section of the cross section would be as follows:

$$f(x)=\sqrt{1-x^{2}}$$

Thus, the Taylor Series about a=0 would be

$$f(x)=1-\frac{1}{1!}\frac{x^{2}}{\sqrt{1-x^{2}}}-\frac{1}{2!}\left(\frac{x}{\sqrt{1-x^{2}}}+\frac{x^{3}}{(1-x^{2})^{\frac{3}{2}}}\right)+\ldots$$

Therefore, it is clear that the cross section of the arcuate chuckwall can be represented by a Taylor Series (even piecewise functions which would normally represent the vertical cross section of the chuckwall in the real world), and it is clear that Applicants did not introduce new matter and had complied with the written description requirement. Accordingly, Applicants respectfully request that the objection to the Specification as containing new matter and rejection of Claims 34 and 40 in view of 35 U.S.C. §112, first paragraph, be withdrawn.

Representations by combining trigonometric functions

The Specification was objected to and Claims 31-33 and 37-39 were rejected under 35 U.S.C. §112, first paragraph, because Applicant amended the Specification and Claims 31-33

and 37-39 to include representations by trigonometric functions, Fourier sine series, Fourier cosine series, or Fourier series. As stated above, Applicant respectfully traverses this objection and rejection. In FIGURE 1 below (as an example), the cross section of the chuckwall is arcuate. Applicant respectfully asserts that the mathematical representation of the arcuate chuckwall can take a variety of forms, namely Fourier series, Fourier sine series (which represent odd functions), or Fourier cosine series (which represent even functions).

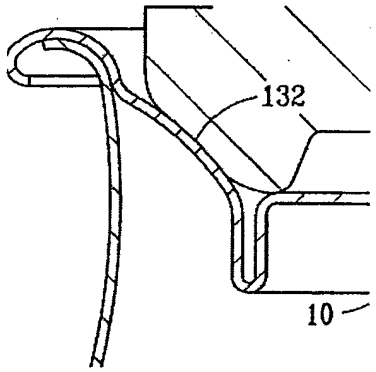


Figure 1 (as originally filed)

The Fourier series is an infinite series representation in terms of sines and cosines of a function. According the Dirchlet conditions, the Fourier series can represent any piecewise regular function with a finite number of discontinuities and a finite number of extrema. For all intents and purposes, any chuckwall made in the real world would have a vertical cross-section represented by a function obeying the Dirchlet conditions. The Fourier series is then defined as follows:

$$f(x)=\frac{a_0}{2}+\sum_{n=1}^{\infty} a_n \cos\frac{n\pi x}{p}+\sum_{n=1}^{\infty} b_n \sin\frac{n\pi x}{p}$$

where

$$a_0=\frac{1}{p}\int_{-p}^{p} f(x)\,dx$$

$$a_n=\frac{1}{p}\int_{-p}^{p} f(x)\cos\frac{n\pi x}{p}\,dx$$

$$b_n=\frac{1}{p}\int_{-p}^{p} f(x)\sin\frac{n\pi x}{p}\,dx$$

As an example, if the chuckwall were assumed to parabolic, the function that would represent the vertical cross-section would be as follows:

$$f(x)=x^2,[-1,1]$$

where

$$a_0=\int_{-1}^{1} x^2\,dx=\frac{2}{3}$$

$$a_n=\int_{-1}^{1} x^2\cos(n\pi x)\,dx=\frac{4}{(n\pi)^2}(-1)^{2n+1}$$

$$b_n=\int_{-1}^{1} x^2\sin(n\pi x)\,dx=0$$

Thus, the Fourier series would be

$$f(x)=\frac{1}{3}+\sum_{n=1}^{\infty}\frac{4}{(n\pi)^2}(-1)^{2n+1}\cos(n\pi x)$$

Therefore, it is clear that the cross-section of the arcuate chuckwall can be represented by a Fourier series (Fourier sine series and Fourier cosine too), and it is clear that Applicant did not introduce new matter and had complied with the written description requirement. Accordingly, Applicant respectfully requests that the objection to the Specification as containing new matter and rejection of Claims 31-33 and 37-39 in view of 35 U.S.C. §112, first paragraph, be withdrawn.

Representation by combining lines

The Specification was objected to and Claim 35 were rejected under 35 U.S.C. §112, first paragraph, because Applicant amended the Specification and Claim 35 to include representations by combining lines. As stated above, Applicants respectfully traverse this objection and rejection. In FIGURE 1 below (as an example), the cross section of the chuckwall is arcuate. Applicant respectfully the mathematical representation of the arcuate chuckwall can take a variety of forms, namely representation by combining lines (or otherwise known as linear interpolation).

Linear Interpolation is a common and one of the simplest curve fitting techniques. From a number of known points along the arcuate chuckwall, one can construct the general form of the chuckwall by performing a linear interpolation curve fit. Additionally, it is also possible to construct the general form of the chuckwall using a variety of other curve fitting techniques, such as polynomial interpolation, wavelets, and splines. Each of these techniques (including linear interpolation) is very well know, and one of ordinary skill in the art would be able to understand how to represent the general form of the chuckwall.

Therefore, it is clear that the cross section of the arcuate chuckwall can be represented by combining lines, and it is clear that Applicant did not introduce new matter and had complied with the written description requirement. Accordingly, Applicant respectfully requests that the objection to the Specification as containing new matter and rejection of Claim 35 in view of 35 U.S.C. §112, first paragraph, be withdrawn.

Representation by combining curves or functions

In view of the foregoing, it is clear that the cross section of the arcuate chuckwall can be represented by a number of mathematical techniques that involve combining functions or curves, and it is clear that Applicant did not introduce new matter and had complied with the written description requirement. Accordingly, Applicant respectfully requests that the objection to the Specification as containing new matter and rejection of Claims 30-40 in view of 35 U.S.C. §112, first paragraph, be withdrawn.

Rejections – 35 U.S.C. §103(a)

Claims 1-7, 10-20, and 27-40 stand rejected under 35 U.S.C. §103(a) in view of U.S. Patent No. 4,908,861 by Wilkinson et al. ("Wilkinson") and U.S. Patent No. 6,065,634 by Brifcani et al. ("Brifcani"). Insofar as they may be applied against the Claims, these rejections have been overcome.

Rejected independent Claims 1, 30, and 36 recite a distinguishing characteristic of the present invention, namely, a nonlinear chuckwall or second member. Specifically, neither Wilkinson and Brifcani do not disclose, singularly or in combination, a nonlinear chuckwall or second member.

The claimed invention includes a multipart outer wall. As an example, a three-part outer wall separate and distinct from the countersink is shown. Specifically, the claimed invention includes an intersection between the lowest and middle portions. The lowest portion of the outer wall, called the ***arcuate portion***, extends outward and upward from the reinforcing bead, a step portion extending outward and upward from the arcuate portion, a first transitional portion extends outward and upward from the step portion, a second transitional portion extends radially outward from the first transitional portion, which is joined to the peripheral curl.

A primary difference between the claimed invention and Wilkinson is the shape and number of parts of the outer wall. Most can lids in the industry, including the present invention and that of prior art of Wilkinson or Brifcani, have a flat or generally flat horizontal center portion with a pull-tab, a countersink around the center panel, an outer wall, and a peripheral curl portion which is used to secure the lids to the open top of the can by means of a seam. In most can lids, the outer wall has a single inclined angle to vertical, and connects the countersink to the peripheral curl portion or seaming panel, as shown in Brifcani and Wilkinson.

Wilkinson describes a can lid having a one-part chuckwall. The countersink wall (22) in Wilkinson, which is shown to be nonlinear in FIGURE 8, is adjacent to the seaming panel or incurve portion (32) at its upper end and adjacent to the countersink bead or root (38) at its lower end. The outer wall of the can lid is often referred to as the chuckwall because when the can lid is being seamed to the can, the chuck tool that is placed on top of the can lid contacts the lid on that chuckwall. But, as stated, Wilkinson only shows a one-part chuckwall, which has inferior structural qualities and requires more material than the claimed invention.

Brifcani discloses a can lid having a frustoconical chuckwall inclined at an angle of between 20° and 60° with respect to an axis perpendicular to the center panel. However,

Brifcani does not disclose or suggest a can lid having an arcuate chuckwall portion. With the claimed invention, the chuckwall is nonlinear, and as can be seen in Fig. 1, even once sealed, the chuckwall remains nonlinear and does not become vertical or rest adjacent to a neck. This nonlinear chuckwall has been found to improve the strength of the can lid, as compared to the simple frustoconical chuckwall of Brifcani.

Moreover, the claimed can lid has several other attributes not provided by Brifani or Wilkinson. For example, the claimed lid is less prone to suffer from the "peak-and-leak" problems of the prior art lids. The "peak-and-leak" problems occur when the can is dropped and deforms (increasing pressure inside of the sealed can). In prior art lids, the lid peaks or deforms to a point. This point is structurally weak, forming a hole. Thus, the hole allows the contents to escape. Under test and real world conditions, the claimed invention may deform, but does not leak as the prior art lids do.

Therefore, the chuckwall of the claimed invention allows the can lid or end to exhibit good structural strength with reduced incidences of failure (because of the nonlinearity of the chuckwall) and the reduction in the amount of metal used in making the lid in comparison to prior art lids. Oftentimes the lid is the most expensive part of the can, a small amount or reduction in metal costs with retained or better structural characteristics being extremely valuable to a manufacturer. Therefore, the claimed invention provides a benefit which Wilkinson and Brifcani do not provide singularly or in combination. Accordingly, Applicant respectfully requests that the rejections of Claims 1, 30 and 36 under 35 U.S.C. §103(a) in view of Wilkinson and Brifcani be withdrawn and that Claims 1, 30 and 36 be allowed.

Claims 2-7, 10-20, 27-29, 31-35, and 37-40 depend on and further limit one of Claims 1, 30, or 36. Hence, for at least the aforementioned reasons, these Claims would be deemed to be in

condition for allowance. Applicant respectfully requests that the rejections of dependent Claims 2-7, 10-20, 27-29, 31-35, and 37-40 also be withdrawn.

Conclusion

Applicant has now made an earnest attempt to place this Application in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests full allowance of Claims 1-7, 10-20, and 27-40.

Applicant has included a check in the amount of $450.00 to cover the fee for the newly added claims. In the event that other any fees are due, the Commissioner is hereby authorized to charge any required fees due (other than issue fees), and to credit any overpayment made, in connection with the filing of this paper to Deposit Account 50-2180 of Storm LLP.

Should the Examiner require any further clarification to place this Application in condition for allowance, the Examiner is invited to telephone the undersigned at the number listed below.

Respectfully submitted,

Dated: Sept. 13, 2006

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